

**ABSTRACT OF THE DISCLOSURE**

The invention relates to a reactor vessel and method for the gasification of carbon-containing fuel, residual and waste materials using an oxygen-containing oxidizing agent and in a reaction chamber which is designed as an entrained-bed reactor, at pressures between ambient pressure and 80 bar, preferably between ambient pressure and 30 bar, the contour of the reaction chamber being delimited by a cooling system, and the pressure in the cooling system always being held at a higher level than the pressure in the reaction chamber, and the cooling system withstanding the maximum possible pressure difference with respect to the reaction chamber, which has been depressurized to atmospheric pressure, which reactor vessel is distinguished by the fact that cooling channels are formed by webs which are in contact both with a refractory protective layer and with the pressure shell.